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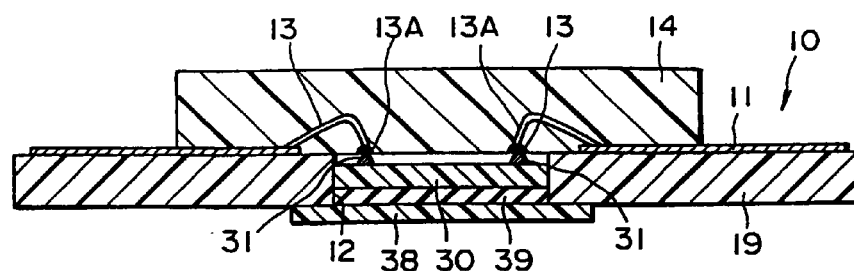
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(54) **Wiring circuit board for mounting of semiconductor chip and method for the preparation thereof**

(57) Proposed is a novel wiring circuit board for mounting of a semiconductor chip suitable for free mounting and demounting thereof. The wiring circuit board (10) comprises: an insulating base plate (19) provided with electrodes (11) on one surface and having an opening (12) for insertion of the semiconductor chip; bonding wires (13) each connected to one of the electrodes at one end, with the other end appearing in the opening at a position just to come into contact with the electrode of a semiconductor chip (30) inserted into the opening; and a resinous encapsulating layer (14) cover-

ing the opening and embedding the bonding wires. A method for the preparation of this wiring circuit board is also disclosed in which accurate positioning of the ends of the bonding wires appearing in the opening of the base plate is accomplished by using a dummy chip (20) provided with etching-resistant false electrodes and inserted into the opening followed by subsequent removal by etching after completion of the bonding work of the bonding wires.

FIG. 2



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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	US 5 287 247 A (SMITS GEARD D ET AL) 15 February 1994 * figure 4D *	1	H01L21/60 H01L23/31 H01L23/13
X	EP 0 554 893 A (LSI LOGIC CORP) 11 August 1993 * figure 1 *	1	
A	EP 0 276 940 A (HITACHI LTD) 3 August 1988 * figure 2 *	2	
A	EP 0 600 289 A (MATSUSHITA ELECTRIC IND CO LTD) 8 June 1994 * figure 6D *	3	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			H01L
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		8 December 1998	De Raeve, R
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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The members are as contained in the European Patent Office EDP file on
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08-12-1998

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5287247 A	15-02-1994	US 5432913 A	11-07-1995
EP 0554893 A	11-08-1993	US 5262927 A	16-11-1993
		DE 69315451 D	15-01-1998
		DE 69315451 T	18-06-1998
		ES 2112342 T	01-04-1998
		JP 5343588 A	24-12-1993
		US 5434750 A	18-07-1995
		US 5557150 A	17-09-1996
		US 5594626 A	14-01-1997
EP 0276940 A	03-08-1988	JP 63187639 A	03-08-1988
EP 0600289 A	08-06-1994	JP 2695370 B	24-12-1997
		JP 6349901 A	22-12-1994
		JP 2699784 B	19-01-1998
		JP 6163645 A	10-06-1994
		US 5425833 A	20-06-1995